Systems Integration

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Integration of the New York Citywide Immunization Registry and LeadQuest

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Key Words: Systems Integration

Background: The New York Citywide Immunization Registry (CIR) and LeadQuest were developed by two different categorical programs of the New York City (NYC) Department of Health. These systems function entirely separately, despite the fact that they both track the same population of NYC children. Maintaining separate systems leads to:

1) the inability to relate data for the same child across systems;
2) missed opportunities for identifying children at high risk for under-immunization and lead poisoning; and
3) the lack of access by providers to lead screening information.

Objectives: To explain the process of integrating the two systems and the model for integration. To describe the benefits of the integration for health care providers, the registries, and the community.

Methods: Give an overview of NYC and the two registries. Explain the rationale for the integration. Describe the phases of the integration process as well as the model for integration. Review data security and confidentiality provisions. List the challenges faced in completing the integration.

Results: A model for the integration of immunization registry systems with other public health systems can be developed which promotes the mission of both systems.

Conclusions: Integrating immunization registries with other public health systems offers significant benefits to the immunization registry itself, as well as to the other systems, health care providers, and the community.

Learning Objective: Describe the benefits, as well as the challenges, of integrating an immunization registry with other public health systems.

Finding Common Ground: First Steps Towards Shared Local Health Department and State Immunization Registries

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Key Words: Systems Integration. Local – State Collaboration.

Background: The economies of a universal standard versus an interlaced network of programs tailored to local environments. Two models for state (or regional) immunization registry development where, in the case of Maryland and Baltimore City, coming together to reconcile a conflicted history has been a labored process.

Objective: Point, counter-point presentation to explain why and how the Baltimore City Health Department and Maryland DHMH immunization registry programs have formed a working collaboration.

Methods: Survey of local health department and state immunization registry personnel.

Results: "Agree to disagree" is not good enough. For the good of the whole, both sides must put aside their history of distrust and vested interests. Develop agreed direction and standards. Identify common objectives. Assess the strengths and weaknesses of each registry program. Key players sit at the same table to begin dialog and negotiation. What is the vision? What is the reality? Compromises are made, and agreement reached towards mutual respect, unified goals, shared resources, master planning (including alternative solutions). Actions speak stronger than words. Begin any partnership by working together on non-confrontational, relatively easy tasks. Observe the 3-Cs (communication – compromise – commitment) throughout.

Conclusion: In registry development, after due process the voices of local and state interests can act in concert.

Learning Objective: Describe the process by which the Baltimore City and Maryland State Health Departments began a collaboration to develop a shared immunization registry platform that addresses local interests.

Realizing a Vision for Real-Time Registry Updates

Alean Kirnak, Manish Kumar: San Diego Immunization Registry

Key Words: Real-time updates. HL7. Collaborations. Partnerships

Background: San Diego had designed its registry around the requirement to facilitate real-time HL7 updates among providers, but had not had an opportunity to test its approach. In 1999, San Diego has had an opportunity to begin implementation of a test case with a partner system, San Diego County Health and Human Services Agency.

Objectives: To show an approach to real-time updates, optionally using HL7.

Methods: Our solution contains three parts:

1) design of the system to facilitate updates;
2) finding a solution to the subsystem that will perform the updates;
3) having a partner organization with a common goal to implement the updates.

Results:

1) We have had an opportunity to test our design concepts and found them to work (pleasantly) as expected.
2) A tentative solution to a subsystem that saves us from developing a custom solution has been found.
3) The solution is currently being worked through with our partner agency and is scheduled for go live this winter/spring.

Conclusions: Although at this writing we do not have final proof of the concept of a multiple-provider registry through real-time updates, we are well on our way to testing the concept.

Learning Objectives: Audients should come away with further information on methods and results for connecting disparate participating systems via real-time HL7 updates.

Linking Utah WIC and Immunization Information Systems

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Participants will be able to identify at least two benefits of integrating WIC and Immunization information systems.

Target Audience: Program Managers, Program Staff

Key Words: WIC. Linkage. Immunization rates. Integration

Background: Under the vision of information system integration, in 1997-1998 the Utah Department of Health developed an electronic “Bridge” linking the Utah Statewide Immunization Information System (USIIS) with the Utah WIC Information Network (UWIN) serving 58 WIC clinics. The Bridge was implemented in 1999. A pre- and post-evaluation of eight WIC clinics was conducted between October 1998 and August 1999.

Objective: Demonstrate the advantage of a simplified information system providing immediate information for WIC clients and the consequent implication for documented immunization rates where multiple recording systems are utilized.

Methods: Review procedures used in development of the electronic Bridge and the modifications developed through a partnership between the statewide WIC program and the USIIS Program. Present the results of a pre- post-implementation evaluation which used Patient Flow Analysis and CASA.

Results: Implementing new procedures to identify children of WIC clients in need of immunization requires a system that does not increase staff workload. The Bridge provided an easy to utilize procedure compatible with different clinic The procedure identifies children at risk as well as inconsistencies in reporting of immunizations.

Conclusions: No conclusive evidence was found that staff time increased by use of the Bridge, and there is strong evidence that recorded immunization rates were improved by identification of incomplete recording. The integration project leadership was key for success.

Learning Objectives: Describe the advantage of simplified system of identification of presumably at-risk children, the implications of cross-system linkage of multiple record systems and partnership building for integrated systems.

Integrating Newborn Databases with an Immunization Registry

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Key Words: Newborn Metabolic Screening. Integration. Developmental Risk Assessment. Hearing Screening. Population Based Registry

Background: KIDSNET, Rhode Island's Immunization Registry, was designed to include information from three population-based newborn public health programs. The initial system design called for warehousing selected data from each program's database.

Objective: To discuss various approaches, advantages, and challenges to integrating newborn information with an Immunization Registry.

Methods: The Developmental Risk Assessment Database which opens an initial record for children in KIDSNET no longer provides selected data downloads to KIDSNET. Instead the entire database is now incorporated into KIDSNET. Newborn Hearing Screening has existed as a separate database since KIDSNET's inception and sends selected data to it. In this case, KIDSNET functions as a data warehouse. Processes for integrating Newborn Metabolic Screening data are currently being established.

Results: Complete database integration reduces redundancy of operating and maintaining data systems. However, it requires a high level of program collaboration and willingness to relinquish direct control of the database. Data warehousing requires a greater investment in data processing but requires a lower level of programmatic collaboration. Data integration provides an opportunity to enhance use of immunization data and other features of KIDSNET but in turn requires additional training.

Conclusions: Programmatic and technical considerations are key to selecting appropriate methods, timing and type of database integration. Database integration provides a mechanism for providing comprehensive assessment for individuals as well as providing opportunities for evaluating newborn populations.

Learning Objective: To be able to identify the advantages of database integration and to identify factors that influence the way data is integrated.

Process of Pulling Local Registries Together into the California Statewide System

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Key Words: Evaluation. Infrastructure. Collaboration. Guidelines. Interaction.

Background: Development of immunization registries started from the bottom up in California, local county registries piloting their own systems with different hardware and software. These distributed systems will be linked through a state hub and statewide system. Guidelines were developed by local and state staff to ensure common data elements and procedures, so that the systems could link. Counties are now joining into regional registries, using software developed by local registry.

Objective: To describe a strategy for development of a statewide registry in a large and diverse state—a strategy that evolves to cope with changing conditions and to incorporate knowledge gained.

Methods: Describe initiation of registry development and plans for statewide system. Describe the organizational methods and infrastructure of the California SIIS. Review major challenges and present status of registries. Review strategical changes in integration plans in response to knowledge gained and changing conditions.

Results: Use of good locally developed software, standardizing of best practices, and a strong infrastructure are enhancing the development of California SIIS, despite difficult challenges.

Conclusions: Leadership taken at the state level to develop a good infrastructure and means of interaction and collaboration among registry developers, can play a highly positive role in supporting registry development and meeting changing conditions. It provides a means to achieve the standardization and consensus necessary to set up a statewide system.

Learning Objectives: Learn about the strategies and planning necessary to develop a statewide immunization system. Learn how a robust infrastructure can help a SIIS meet changing conditions. Learn how interaction and collaboration can enhance the development of the registry system and ease the burden of local developers. Review the types of committees and standards involved.